Citation for the 2025 Mahony-Neumann-Room Prize

Awarded to
Justin Forlano, Tadhiro Oh, Yuzhao Wang
for the paper
"Stochastic nonlinear Schrödinger equation with almost space-time white noise." *J. Aust. Math. Soc. 109* (2020), no. 1, 44–67.

This paper settles a challenging problem and a notable goal in the field of stochastic nonlinear Schrödinger equations: local well-posedness (with almost space-time white noise) for the case of cubic nonlinearities. The authors set their work in context via clear description of relevant previous work, and establish its significance, including discussion of important applications in physics. As two examples, the cubic nonlinear Schrödinger equation describes the propagation of light waves in optical fibers and it can be used in the study of Bose-Einstein condensates. The almost space-time white noise here allows for a generalization of the classical model. The results and difficult arguments in the paper continue to be widely acknowledged, including two recent citations in Inventiones Mathematicae. Given the international activity in the field, further accrual of citations and corresponding recognition of the *Journal* is to be expected.